



APPENDIX B

VERSION OF AMENDED CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

1 2. (Twice amended) [A device as described in claim 1] A device for the trenchless
2 replacement of in-situ pipe, comprising:
3 a mole;
4 a length of cable, said cable being engagable to said mole;
5 a cable pulling device being releasably engagable to said cable;
6 a cable pulling device mounting frame being releasably engagable to said cable pulling device;
7 and
8 wherein said cable pulling device includes at least one pair of cable engaging collets that
9 function to engage said cable on a said pulling stroke and to release said cable on a said recovery
10 stroke; and
11 wherein at least one further pair of collets is provided that function to engage said cable on said
12 recovery stroke and release said cable on said pulling stroke.

1 11. (Twice amended) [A device as described in claim 1] A device for the trenchless
2 replacement of in-situ pipe, comprising:
3 a mole;
4 a length of cable, said cable being engagable to said mole;
5 a cable pulling device being releasably engagable to said cable;
6 a cable pulling device mounting frame being releasably engagable to said cable pulling device;
7 wherein said mole includes a nose portion being engagable to said cable, a tapered body portion
8 and a replacement pipe engagement portion, said mole further including at least one blade, said
9 tapered body portion acting to initially contact, fracture and expand said pipe for the replacement
10 thereof with a length of replacement pipe, and said blade acting to cut pipe engagement devices
11 encountered by said mole after said pipe has been expanded by said tapered body portion.

1 12. (Twice amended) A device as described in claim [7] 2 wherein the cable pulling device
2 is a post tensioning ram (PTR), and wherein the weight to pulling force ratio of the PTR is in the
3 range of 2 pounds of weight per ton (2,000 pounds) of pulling force.

1 15. (Twice amended) [A device as described in claim 14] A device for the trenchless
2 replacement of in-situ pipe, comprising:
3 a mole;
4 a length of cable, said cable being engagable to said mole;
5 a cable pulling device;
6 a cable pulling device mounting frame being releasably engagable to said cable pulling device
7 wherein said cable pulling device mounting frame includes an annulus member including a cable
8 passage bore formed therethrough and a cable insertion slot formed through portions of said
9 annulus member for the sideways insertion of said cable within said cable passage bore of said
10 annulus member, and
11 wherein said annulus member includes a cable pulling device [holding means] engagement
12 portion for releasably [holding] engaging a portion of said cable pulling device [therewithin].

1 16. (Twice amended) A device as described in claim [14] 15 wherein said cable pulling
2 device mounting frame includes a reaction plate having an enlarged surface for disbursing a
3 reaction force against a cable pulling force generated by said cable pulling device.

1 20. (Twice amended) A device as described in claim [18] 15 wherein said cable pulling
2 frame includes a plurality of frame members and a rotatable cable pulley being mounted to said
3 frame members.

1 25. (Twice amended) A device as described in claim [14] 15 wherein said mole includes a
2 nose portion being engagable to said cable, a tapered body portion and a replacement pipe

engagement portion, said mole further including at least one blade, said tapered body portion acting to initially contact, fracture and expand said pipe for the replacement thereof with a length of replacement pipe, and said blade acting to cut pipe engagement devices encountered by said mole after said pipe has been expanded by said tapered body portion.

27. (Twice amended) [A device as described in claim 26] A device for the trenchless replacement of in-situ pipe, comprising:

a mole;

a length of cable, said cable being engagable to said mole;

a cable pulling device including a cable engagement mechanism and a cable pulling device engagement means functioning to provide a mounting structure for said cable pulling device;

said cable pulling device engagement means further including a reaction plate having an enlarged surface for disbursing a reaction force against a cable pulling force generated by said cable pulling device;

a cable pulling frame, said cable pulling frame being mountable to said reaction plate and said cable pulling device being mountable to said cable pulling frame; and

wherein said cable engagement mechanism includes at least one pair of cable engaging collets that function to engage said cable on a said pulling stroke and to release said cable on a said recovery stroke, and at least one further pair of collets that function to engage said cable on said recovery stroke and to release said cable on said pulling stroke, and wherein said cable pulling device is formed with a slotted cable insertion structure for the sideways insertion of said cable within said cable pulling device.

31. (Twice amended) [A mole as described in claim 30] A mole for use in the trenchless replacement of in-situ pipe, comprising, a nose portion being engagable to a cable, a tapered body portion and a replacement pipe engagement portion, the mole further including at least one blade, said tapered body portion acting to initially contact, fracture and expand said in-situ pipe for the replacement thereof with a length of replacement pipe, and said blade acting to cut pipe

6 engagement devices encountered by the mole after said pipe has been expanded by said tapered
7 body portion; and
8 wherein said blade includes a relatively thin portion that is disposable within said tapered body
9 portion of [said] the mole and an expanded portion that projects from said tapered body portion
10 of [said] the mole.

1 32. (Twice amended) [A mole as described in claim 30] A mole for use in the trenchless
2 replacement of in-situ pipe, comprising, a nose portion being engagable to a cable, a tapered
3 body portion and a replacement pipe engagement portion, the mole further including at least one
4 blade, said tapered body portion acting to initially contact, fracture and expand said in-situ pipe
5 for the replacement thereof with a length of replacement pipe, and said blade acting to cut pipe
6 engagement devices encountered by the mole after said pipe has been expanded by said tapered
7 body portion; and
8 wherein said blade is disposed within a slot formed in [said] the mole, and wherein a rearward
9 edge of said blade is formed with an angle of approximately 80° with respect to a bottom edge of
10 said blade, and wherein said slot is formed with a shape that corresponds to said angle, such that
11 said blade is held within said slot.

1 35. (Twice amended) [A mole as described in claim 30] A mole for use in the trenchless
2 replacement of in-situ pipe, comprising, a nose portion being engagable to a cable, a tapered
3 body portion and a replacement pipe engagement portion, the mole further including at least one
4 blade, said tapered body portion acting to initially contact, fracture and expand said in-situ pipe
5 for the replacement thereof with a length of replacement pipe, and said blade acting to cut pipe
6 engagement devices encountered by the mole after said pipe has been expanded by said tapered
7 body portion; [further including]
8 a replacement pipe engagement sleeve member for the engagement of said replacement pipe with
9 [said] the mole, said sleeve member being formed with cylindrical sidewalls and an internal
10 radially projecting wall portion having a bore formed therethrough;

11 and wherein [said] the mole is formed with a rearwardly projecting threaded portion that projects
12 through said bore, such that a threaded nut may be threadably engaged thereto to secure said
13 sleeve upon [said] the mole;
14 said sleeve further being adapted for the thermal pressure bonding of said replacement pipe
15 thereto.

1 46. (Twice amended) [A method as described in claim 40], A method for the trenchless
2 replacement of in-situ pipe, comprising the steps of:
3 exposing a first end of said pipe;
4 exposing a second end of said pipe;
5 disposing a pulling cable through said pipe between said first end and said second end;
6 engaging a mole to said cable at said first end;
7 engaging a cable pulling device to said cable at said second end; and
8 installing a reaction plate at said second end,
9 pulling said mole through said pipe utilizing said cable pulling device; and
10 including the further steps of engaging said cable with a first pair of collets on a cable pulling
11 stroke of said cable pulling device, and engaging said cable with a second pair of collets on a
12 recovery stroke of said cable pulling device.

1 47. (Twice amended) A method as described in claim [40] 46 wherein said cable pulling
2 device is a post tensioning ram (PTR).

1 48. (Once amended) A cable pulling device, comprising:
2 a first structural frame portion including at least two hydraulic cylinders, and a first pair
3 of cable engaging collets that are engaged with said first structural portion and disposed to
4 frictionally engage a portion of a cable that passes within said first pair of collets;
5 a second structural frame portion being movably engaged with said first structural frame
6 portion, and a second pair of collets that are engaged with said second structural frame portion

7 and disposed to frictionally engage a portion of a cable that passes within said second pair of
8 collets.

1 49. (Once amended) A cable pulling device as described in claim 49 wherein a piston rod
2 member projects from each of said at least two hydraulic cylinders, and wherein said second
3 structural frame portion is fixedly engaged to said piston rod members; and

4 wherein said hydraulic cylinders are operable to cause said first structural frame portion
5 and said second structural frame portion to separate and to come together in a reciprocating
6 manner; and

7 wherein said first pair of collets is disposed to engage said cable when said first structural
8 frame portion is separating from said second structural frame portion, and wherein said second
9 pair of collets is disposed to engage said cable when said first structural frame portion is coming
10 together with said second structural frame portion.